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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,442	03/26/2004	John W. Ketchum	000252C1	8969
23696	7590	02/23/2009	EXAMINER	
QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121			CORRIELUS, JEAN B	
ART UNIT	PAPER NUMBER			
			2611	
NOTIFICATION DATE		DELIVERY MODE		
02/23/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/810,442	<b>Applicant(s)</b> KETCHUM, JOHN W.
	<b>Examiner</b> Jean B. Corrielus	<b>Art Unit</b> 2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 16 July 2008.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,4-11,13-16,19-21, 23-26,28,29 and 38 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,4-11,13-16,19-21, 23-26,28,29 and 38 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 2/11/09
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. Applicant's response has overcome the outstanding 112 first paragraph rejection.

***Claim Objections***

2. Claims 7 and 15 are objected to because of the following informalities: claim 7, last line recited "transmitting step" however claim 1 only recites that "the chips are transmitted". Similar comment applies equally to claim 15. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 29 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 29, "the modulating step" lacks of proper antecedent basis.

***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

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F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1, 4-11, 13-16, 19-21, 23-26, 28-29 and 38 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4-7, 9-11, 13-16, 20-23, 25-2729-30 and 32 US Patent No. 6,731,668. Although the conflicting claims are not identical, they are not patentably distinct from each other because

claim 1 of the instant application is fully encompassed by claim 7 of the patent.

claim 4 of the instant application is fully encompassed by claim 4 of the patent.

claim 5 of the instant application is fully encompassed by claim 5 of the patent.

claim 6 of the instant application is fully encompassed by claim 6 of the patent.

claim 9 of the instant application is fully encompassed by claim 9 of the patent.

claim 10 of the instant application is fully encompassed by claim 10 of the patent.

claim 11 of the instant application is fully encompassed by claim 11 of the patent.

claim 13 of the instant application is fully encompassed by claim 13 of the patent.

claim 14 of the instant application is fully encompassed by claim 14 of the patent.

claim 15 of the instant application is fully encompassed by claim 15 of the patent.

claim 8 of the instant application is fully encompassed by claim 16 of the patent.  
claim 16 of the instant application is fully encompassed by claim 23 of the patent.  
claim 19 of the instant application is fully encompassed by claim 20 of the patent.  
claim 20 of the instant application is fully encompassed by claim 21 of the patent.  
claim 21 of the instant application is fully encompassed by claim 22 of the patent.  
claim 24 of the instant application is fully encompassed by claim 25 of the patent.  
claim 25 of the instant application is fully encompassed by claim 26 of the patent.  
claim 26 of the instant application is fully encompassed by claim 27 of the patent.  
claim 28 of the instant application is fully encompassed by claim 29 of the patent.  
claim 29 of the instant application is fully encompassed by claim 30 of the patent.  
claim 23 of the instant application is fully encompassed by claim 32 of the patent.  
and as such anticipate(s) claim(s) 1, 4-11, 13-16, 19-21, 23-26, 28-29 of the instant application. A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or **anticipated by**, the earlier claim. In re Longi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). " ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

Claim 38 differs from claim 23 by the fact that claim 38 includes means plus function limitations while claim 23 includes actual hardware component. However, it would have been obvious to one skill in the art to present claims as means plus function limitations as oppose to actual hardware because substituting a component with another similar component would produce similar result and therefore would have been in the purview of one of ordinary skill in the art.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 4-6, 16, 19-21 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (hereafter Kim-1) US patent no. 5,619,526 in view of Chen US Patent no. 7,154,846 and further in view of Kim et al (hereafter Kim-2) US patent No. 7,072,324.

As per claim 1, Kim-1 teaches a method and apparatus fig. 1 comprising supplying an input bit stream (note input to 101) to a channel coding block 101; feeding a replica of an entire coded sequence to each of a plurality of orthogonal sequence covers 111 (note output of 104 feeding both sequence covers 111), wherein each of the plurality of orthogonal sequence covers outputs one of a plurality of spread sequences of output chips (note the output of each cover is by definition a spread sequence of output chips), and further wherein the plurality of spread sequences of output chips are configured to

be transmitted over a plurality of channels note the antennas in fig. 1. however, Kim-1 fails to teach that the signal is modulated after being channel coded and prior to feeding the covers it also fail to teach a plurality of received antennas (Note by definition, a MIMO is a plurality of transmit antennas and a plurality of received antennas). However, as evidence by Chen fig. 1D, it is well known in the art to use a channel coder 860 to code a signal use a modulator 866 to modulate the coded signal and provide the modulated signal to a plurality of Walsh covers. Given that fact, it would have been obvious to one skill in the art to modulate the signal prior to be applied to the Walsh cover in order to shape the signal in a format suitable for transmission. In addition, modulating the signal prior to being Walsh covering would have ensure reduction of circuit component since only one such modulator would have been required as opposed to modulated after Walsh covering, resulting in a reduction of circuit size and possible cost to implement the system as well. Kim-2 teaches the transmission of a plurality of spread sequences over a MIMO channel col. 1, lines 19-32. Given that fact, it would have been obvious to one skill in the art to implement such a teaching in Kim-1 and Chen in order to improve signal detection because MIMO channel are known to be more resistant to multipath and other type of channel effects that if left uncompensated tend to affect signal quality.

As per claim 4, KIM-1 does not explicitly teach that the plurality of covers comprises mutually orthogonal Walsh cover. Kim-2 teaches that the plurality of covers comprises mutually orthogonal Walsh cover see col. 2, lines 54-56. Given that fact, it would have

been obvious to one skill in the art to include such a teaching in Kim-1 and Chen in order to minimize interference between the codes.

As per claim 5, Kim-1 does not teach that the use of trellis coded QAM. However, at col. 8, line 14, Chen teaches that the modulation scheme employed is a QAM modulation Scheme does not explicitly teach trellis coded QAM scheme. However, it is well established in the art to used trellis code in combination with QAM. Given that, it would have been obvious to one skill in the art to use the QAM modulation in combination with trellis code in order to satisfy the requirement of the system and to take advantage of its enhanced technological feature such as generation of modulated signal with reduce signal to noise ratio.

As per claim 6, Kim-1 does not teach the additional limitation recited in claim 6. Chen teaches a rate of 1/3 or 1/5 instead of using a rate of  $(n-1)/n$ . however, it is well known in the art of coding theory to use a coder having a rate of  $(n-1)/n$ . given that one skill in the art would have been motivated to modify Kim-1, Chen and Kim-2 to use a coding rate of  $(n-1)/n$  in order to satisfy coding requirement of the system so as to generate coded signal having a desired coding rate.

As per claim 16, see claim 1.

As per claim 19, see claim 4.

As per claim 20, see claim 5.

As per claim 21 see claim 6.

As per claim 38, see claim 1.

***Allowable Subject Matter***

9. The indicated allowability of claims 8-11, 13-15, and 23-26, 28-29 is withdrawn in view of the following new ground of rejection(s).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020. The examiner can normally be reached on Monday-Thursday from 9:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jean B Corrielus/

Primary Examiner, Art Unit 2611